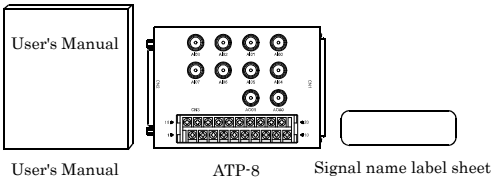
Termination Panel with BNC connectors for Analog I/O Boards

ATP-8 User's Manual

Thank you for purchasing the CONTEC product.
The product consists of the items listed below. Check, with the following list, that your package is complete. If you discover damaged or missing items, contact your retailer.

Product Configuration List

- ATP-8 Termination Panel…1
- This User's Manual…1
- Signal name label sheet…1



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1. About the Termination Panel

This product is a BNC connector terminal box for CONTEC's ADA16-32/2(PCI)F, ADA16-32/2(CB)F, AIO-163202F-PE, AI-1664LA-LPE, AD16-64(LPCI)LA, AD12-8(PM) and other analog to digital conversion products. This terminal box eases your connection of external devices and signals.

* For more details on this, refer to "6. Specifications".

1.1. Features

Compact designing

With its compact designing, you can place this BNC connector terminal box at your Laptop computer. By removing the connection cable, you can carry this box with your easily.

Easy to connect external signals

Allow you to connect analog signal through a BNC cable. All other digital signals are connected through M3 screw terminals.

Signal name label sheet

A name label sheet of digital signals of AD board or cards is bundled.
Sticking this name label helps you to link the external digital signals to our board or PC-Card products.

1.2. Customer Support

CONTEC provides the following support services for you to use CONTEC products more efficiently and comfortably.

Web Site http

Japanese	http://www.contec.co.jp/
English	http://www.contec.com/
Chinese	http://www.contec.com.cn/

Latest product information

CONTEC provides up-to-date information on products.

CONTEC also provides product manuals and various technical documents in the PDF.

Note! For product information

Contact your retailer if you have any technical question about a CONTEC product or need its price, delivery time, or estimate information.

1.3. Limited Three-Year Warranty

CONTEC products are warranted by CONTEC CO., LTD. to be free from defects in material and workmanship for up to three years from the date of purchase by the original purchaser.

Repair will be free of charge only when this device is returned freight prepaid with a copy of the original invoice and a Return Merchandise Authorization to the distributor or the CONTEC group office, from which it was purchased.

This warranty is not applicable for scratches or normal wear, but only for the electronic circuitry and original boards. The warranty is not applicable if the device has been tampered with or damaged through abuse, mistreatment, neglect, or unreasonable use, or if the original invoice is not included, in which case repairs will be considered beyond the warranty policy.

1.4. How to Obtain Service

For replacement or repair, return the device freight prepaid, with a copy of the original invoice. Please obtain a Return Merchandise Authorization Number (RMA) from the CONTEC group office where you purchased before returning any product.

* No product will be accepted by CONTEC group without the RMA number.

1.5. Liability

The obligation of the warrantor is solely to repair or replace the product. In no event will the warrantor be liable for any incidental or consequential damages due to such defect or consequences that arise from inexperienced usage, misuse, or malfunction of this device.

2. Connect an ADA16-32/2(PCI)F, AIO-163202F-PE, AI-1664LA-LPE, AD16-64(LPCI)LA, Board or an ADA16-32/2(CB)F PC-Card

2.1. Terminal Pin and the Corresponding Board/PC-Card Connector Pin Assignment

Table 1 Terminal Pin and the Related Board/PC-Card Connector Pin Assignment

Signal name on ATP-8	Description	Signal name on ADA16-32/2(xx)F
AI00 - AI07	BNC connectors for analog inputs	Analog Input00 - Analog Input07
AO00 - AO01	BNC connectors for analog outputs	Analog Output00 - Analog Output01
AISTART	Trigger input signal that starts one of analog to digital conversion sampling transactions.	AI External Start Trigger Input
AISTOP	Trigger input signal that stops an on going analog to digital conversion sampling transaction.	AI External Stop Trigger Input
AIEXCLK	Clock input signal for analog to digital conversion transactions	AI External Sampling Clock Input
AOSTART	Trigger input signal that starts one of digital to analog conversion sampling transactions.	AO External Start Trigger Input
AOSTOP	Trigger input signal that stops an on going digital to analog conversion sampling transaction.	AO External Stop Trigger Input
AOEXCLK	Clock input signal for digital to analog conversion transactions	AO External Sampling Clock Input
DI00 - DI03	Digital input signals	Digital Input00 - Digital Input03
DO00 - DO03	Digital output signals	Digital Output00 - Digital Output03
CNTGATE	Counter gate control input signal	Counter Gate Control Input
CNTUPCLK	Pulse input signal for Up counting transaction	Counter Up Clock Input
CNTOUT	Counter output signal	Counter Output
DGND	Ground for all the digital signals	Digital Ground
Reserved	Reserved	Reserved

Analog input signals (AI00 - AI07) and Analog output signals (AO00 - AO01)

Only the first eight channels of analog input signals can be connected through this ATP-8 terminal box. All two analog output signals can be connected through this terminal box.

Digital input and output signals (DI00 - DI03, DO00 - DO03, CNT**, AI**, AO**)

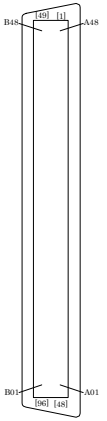
For an ADA16-32/2(PCI)F, AIO-163202F-PE, AI-1664LA-LPE, AD16-64(LPCI)LA board, only four in of its eight digital input signals, four out of its eight digital output signals, one counter of its two counter signals and all of its trigger signals can be connected through this ATP-8 terminal box. For an ADA16-32/2(CB)F card, all of its digital signals are supported.

Table 2 Pin Assignment of Digital Input and Output Signals (CN3)

11	12	13	14	15	16	17	18	19	20
AISTOP	AIEXCLK	AOSTOP	AOEXCLK	DI01	DI03	DO01	DO03	CNTGATE	CNTUPCLK
1	2	3	4	5	6	7	8	9	10
AISTART	DGND	AOSTART	DGND	DI00	DI02	DO00	DO02	CNTOUT	Reserved

2.2. Pin Assignment of Connector CN1

Non Connect	N.C.	B48		A48	AO 00	Analog Output 00
	N.C.	B47		A47	AGND	Analog Ground (for AO)
	N.C.	B46		A46	AO 01	Analog Output 01
	N.C.	B45		A45	AGND	Analog Ground (for AO)
Analog Ground (for AI)	AGND	B44		A44	AI 00	Analog Input 00
	AGND	B43		A43	AGND	Analog Ground (for AI)
	AGND	B42		A42	AI 01	Analog Input 01
	AGND	B41		A41	AGND	Analog Ground (for AI)
	AGND	B40		A40		
	AGND	B39		A39		
	AGND	B38		A38	AI 02	Analog Input 02
	AGND	B37		A37	AGND	Analog Ground (for AI)
	AGND	B36		A36	AI 03	Analog Input 03
	AGND	B35		A35	AGND	Analog Ground (for AI)
	AGND	B34		A34		
	AGND	B33		A33		
	AGND	B32		A32	AI 04	Analog Input 04
	AGND	B31		A31	AGND	Analog Ground (for AI)
	AGND	B30		A30	AI 05	Analog Input 05
	AGND	B29		A29	AGND	Analog Ground (for AI)
	AGND	B28		A28		
	AGND	B27		A27		
	AGND	B26		A26	AI 06	Analog Input 06
	AGND	B25		A25	AGND	Analog Ground (for AI)
	AGND	B24		A24	AI 07	Analog Input 07
	AGND	B23		A23	AGND	Analog Ground (for AI)
	AGND	B22		A22		
	AGND	B21		A21		
Digital Ground	DGND	B20		A20	DGND	Digital Ground
Non Connect	N.C.	B19		A19	N.C.	Non Connect
Digital Output 00	DO 00	B18		A18	DI 00	Digital Input 00
Digital Output 01	DO 01	B17		A17	DI 01	Digital Input 01
Digital Output 02	DO 02	B16		A16	DI 02	Digital Input 02
Digital Output 03	DO 03	B15		A15	DI 03	Digital Input 03
Non Connect	N.C.	B14		A14	N.C.	Non Connect
	N.C.	B13		A13		
	N.C.	B12		A12		
	N.C.	B11		A11		
	N.C.	B10		A10		
	N.C.	B09		A09		
Digital Ground	DGND	B08		A08	DGND	Digital Ground
AO External Sampling Clock Input	AO EXCLK	B07		A07	AI EXCLK	AI External Sampling Clock Input
AO External Stop Trigger Input	AO STOP	B06		A06	AI STOP	AI External Stop Trigger Input
AO External Start Trigger Input	AO START	B05		A05	AI START	AI External Start Trigger Input
Non Connect	N.C.	B04		A04	CNT UPCLK	Counter UP Clock Input
	N.C.	B03		A03	Reserved	Reserved
	N.C.	B02		A02	CNT GATE	Counter Gate Control Input
	N.C.	B01		A01	CNT OUT	Counter Output



- [ ] shows the pin numbers specified by HONDA TSUSHIN KOGYO CO., LTD.

Figure 1 Pin Assignment of Connector CN1

Table 3 Description of Signals (CN1)

Analog Input00 - Analog Input07	Analog input signals. The number corresponds to its channel number.
Analog Output00 - Analog Output01	Analog output signals. The number corresponds to its channel number.
Analog Ground	Ground for analog input and output signals.
AI External Start Trigger Input	Trigger input signal that starts one of analog to digital conversion sampling transactions.
AI External Stop Trigger Input	Trigger input signal that stops an on going analog to digital conversion sampling transaction.
AI External Sampling Clock Input	Clock input signal for analog to digital conversion transactions
AO External Start Trigger Input	Trigger input signal that starts one of digital to analog conversion sampling transactions.
AO External Stop Trigger Input	Trigger input signal that stops an on going digital to analog conversion sampling transaction.
AO External Sampling Clock Input	Clock input signal for digital to analog conversion transactions
Digital Input00 - Digital Input03	Digital input signals
Digital Output00 - Digital Output03	Digital output signals
Counter Gate Control Input	Counter gate control input signal
Counter Up Clock Input	Pulse input signal for Up counting transaction
Counter Output	Counter output signal
Digital Ground	Ground for all the digital signals
Reserved	Reserved
N.C.	Not connected

2.3. Application with an ADA16-32/2(PCI)F, AIO-163202F-PE, AI-1664LA-LPE, AD16-64(LPCI)LA Board or an ADA16-32/2(CB)F PC-Card

2.3.1. Connect an ADA16-32/2(CB)F PC-Card and AI-1664LA-LPE, AD16-64(LPCI)LA Board

You need a Contec ADC-68M/96F option cable to connect the card to the CN1 connector of ATP-8 terminal box.

2.3.2. Connect an ADA16-32/2(PCI)F, AIO-163202F-PE Board

You need a Contec PCB96PS series option cable or a Contec PCB96P series option cable to connect the board to the CN1 connector of ATP-8 terminal box.

⚠ CAUTION

We suggest you to use a PCB96PS-0.5m option cable to connect the board and terminal box.

2.4. Connect External Signals

2.4.1. Connect BNC Connectors

You use BNC connectors to connect analog input and output signals.

2.4.2. Connect Digital Signals

You use M3 screw terminals to connect digital signals.

2.4.3. Pin Assignment of Digital Signal Connector CN3

Table 4 Pin Assignment of Digital Signal Connector CN3 for ADA16-32/2(CB)F, AIO-163202F-PE, AI-1664LA-LPE, AD16-64(LPCI)LA and ADA16-32/2(PCI)F

11	12	13	14	15	16	17	18	19	20
AISTOP	AIEXCLK	AOSTOP	AOEXCLK	DI01	DI03	DO01	DO03	CNTGATE	CNTUPCLK
1	2	3	4	5	6	7	8	9	10
AISTART	DGND	AOSTART	DGND	DI00	DI02	DO00	DO02	CNTOUT	Reserved

2.4.4. Example of Using Signal Name Label Sheet

A name label sheet for M3 screw terminals is bundled with this ATP-8 terminal box. There are two name labels. One is for ADA16-32/2(PCI)F board and ADA16-32/2(CB)F PC-Card. Another label is for AD12-8(PM) PC-Card. You can stick one of these labels either on top of the screw terminals' cover or at front side of ATP-8 box by your preference, corresponding to your AD product.

← Name Label Sheet

Stick one of these labels either on top of the screw terminals' cover or at front side of ATP-8 box.

3. Connect an AD12-8(PM) PC-Card

3.1 Terminal Pin and AD12-8(PM) PC-Card Connector Pin Assignment

Table 5 Terminal Pin and AD12-8(PM) PC-Card Connector Pin Assignment

Signal name on ATP-8	Description	Signal name of AD12-8(PM)
AI00 - AI07	BNC connectors for analog inputs	Analog Input0 - Analog Input7
AO00 - AO01	BNC connectors for analog outputs	Analog Output0 - Analog Output1
AISTART	Trigger input signal that starts one of analog to digital conversion sampling transactions.	N/A
AISTOP	Trigger input signal that stops an on going analog to digital conversion sampling transaction.	N/A
AIEXCLK	Clock input signal for analog to digital conversion transactions	External Sampling Clock Input
AOSTART	Trigger input signal that starts one of digital to analog conversion sampling transactions.	N/A
AOSTOP	Trigger input signal that stops an on going digital to analog conversion sampling transaction.	N/A
AOEXCLK	Clock input signal for digital to analog conversion transactions	N/A
DI00 - DI03	Digital input signals	Digital Input0 - Digital Input3
DO00 - DO03	Digital output signals	Digital Output0 - Digital Output3
CNTGATE	Counter gate control input signal	N/A
CNTUPCLK	Pulse input signal for Up counting transaction	N/A
CNTOUT	Counter output signal	N/A
DGND	Ground for all the digital signals	Digital Ground
Reserved	Reserved	N/A

Analog input and output signals (AI00 - AI07, AO00 - AO01)

Connect the eight analog input signals and two analog output signals.

Digital input and output signals (DI00 - DI03, DO00 - DO03)

For connecting the four digital input signals, four digital output signals and a clock input signal for analog to digital conversion transaction.
Nor other signals can be connected.

Table 6 Pin Assignment of Digital Input and Output Signals (CN3)

11	12	13	14	15	16	17	18	19	20
Reserved	AIEXCLK	Reserved	Reserved	DI01	DI03	DO01	DO03	Reserved	Reserved
1	2	3	4	5	6	7	8	9	10
Reserved	DGND	Reserved	DGND	DI00	DI02	DO00	DO02	Reserved	Reserved

3.2. Pin Assignment of Connector CN2

Non Connect	N.C.	37	19	N.C.	Non Connect	
	N.C.	36	18	N.C.		
	N.C.	35	17	N.C.		
Digital Ground	DGND	34	16	AIEXCLK	External Sampling Clock Input	
Digital Output 2	DO02	33	15	DO03	Digital Output 3	
Digital Output 0	DO00	32	14	DO01	Digital Output 1	
Digital Input 3	DI03	31	13	DGND	Digital Ground	
Digital Input 1	DI01	30	12	DI02	Digital Input 2	
Analog Ground	AGND	29	11	DI00	Digital Input 0	
	AGND	28	10	AO01	Analog Output 1	
	AGND	27	9	AO00	Analog Output 0	
	AGND	26	8	AI07	Analog Input 7	
	AGND	25	7	AI06	Analog Input 6	
	AGND	24	6	AI05	Analog Input 5	
	AGND	23	5	AI04	Analog Input 4	
	AGND	22	4	AI03	Analog Input 3	
	AGND	21	3	AI02	Analog Input 2	
	AGND	20	2	AI01	Analog Input 1	
			1	AI00	Analog Input 0	

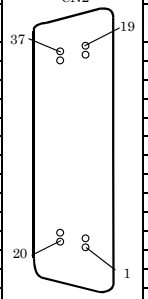


Figure 2 Pin Assignment of CN2

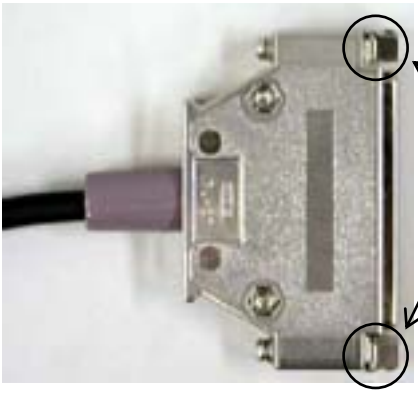
Table 7 Description of Signals (CN2)

Analog Input0 - Analog Input7	Analog input signals. The number corresponds to its channel number.
Analog Output0 - Analog Output1	Analog output signals. The number corresponds to its channel number.
Analog Ground	Ground for analog input and output signals.
Digital Input0 - Digital Input3	Digital input signals
Digital Output0 - Digital Output3	Digital output signals
External Sampling Clock Input	Clock input signal for digital to analog conversion transactions
Digital Ground	Ground for all the digital signals
N.C.	Not connected

3.3. Application with an AD12-8(PM) PC-Card

3.3.1. Connect the AD12-8(PM) PC-Card

First, you have to remove the nut parts from the AD12-8(PM) bundled cable, CB-37FS.



Then, you connect the CB-37FS cable to CN2 connector of ATP-8 terminal box.

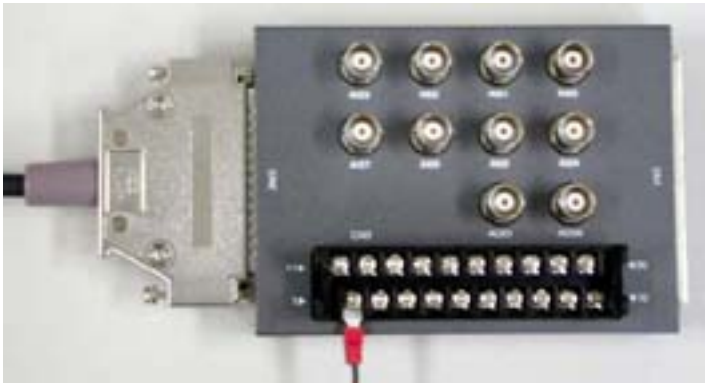
3.4. Connect External Signals

3.4.1. Connect BNC Connectors

You use BNC connectors to connect analog input and output signals.

3.4.2. Connect Digital Signals

You use M3 screw terminals to connect digital signals.



3.4.3. Pin Assignment of Digital Signal Connector CN3.

Table 8 Pin Assignment of Digital Signal Connector CN3 for AD12-8(PM)

11	12	13	14	15	16	17	18	19	20
Reserved	AIEXCLK	Reserved	Reserved	DI01	DI03	DO01	DO03	Reserved	Reserved
1	2	3	4	5	6	7	8	9	10
Reserved	DGND	Reserved	DGND	DI00	DI02	DO00	DO02	Reserved	Reserved

3.4.4. Example of Using Signal Name Label Sheet

A name label sheet for M3 screw terminals is bundled with this ATP-8 terminal box.
There are two name labels. One is for ADA16-32/2(PCI)F board and ADA16-32/2(CB)F PC-Card.
Another label is for AD12-8(PM) PC-Card.
You can stick one of these labels either on top of the screw terminals' cover or at front side of ATP-8 box by your preference, corresponding to your AD product.

← Name Label Sheet

Stick one of these labels either on top of the screw terminals' cover or at front side of ATP-8 box.

4. Connection Drawing

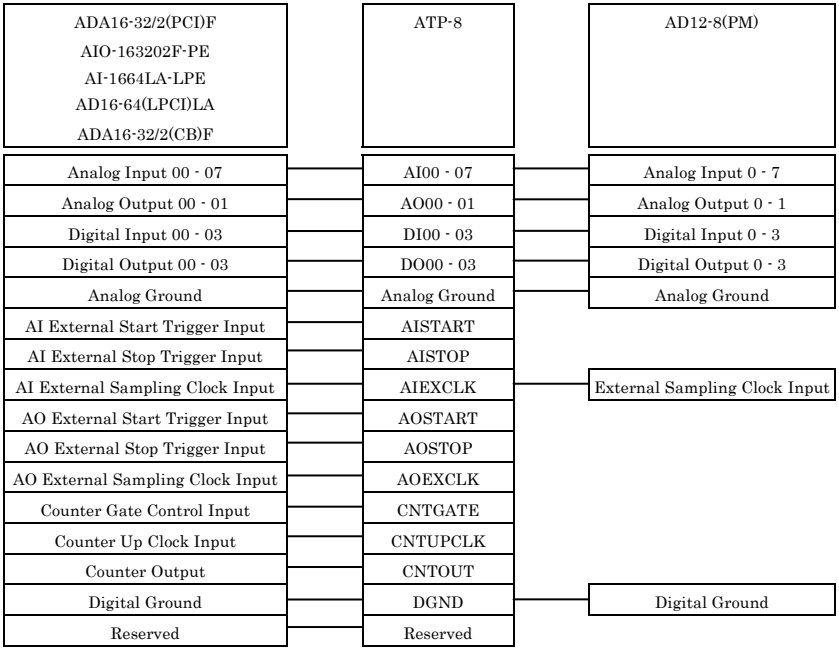


Figure 3 Connection Drawing

5. Dimensions and Connector Layout

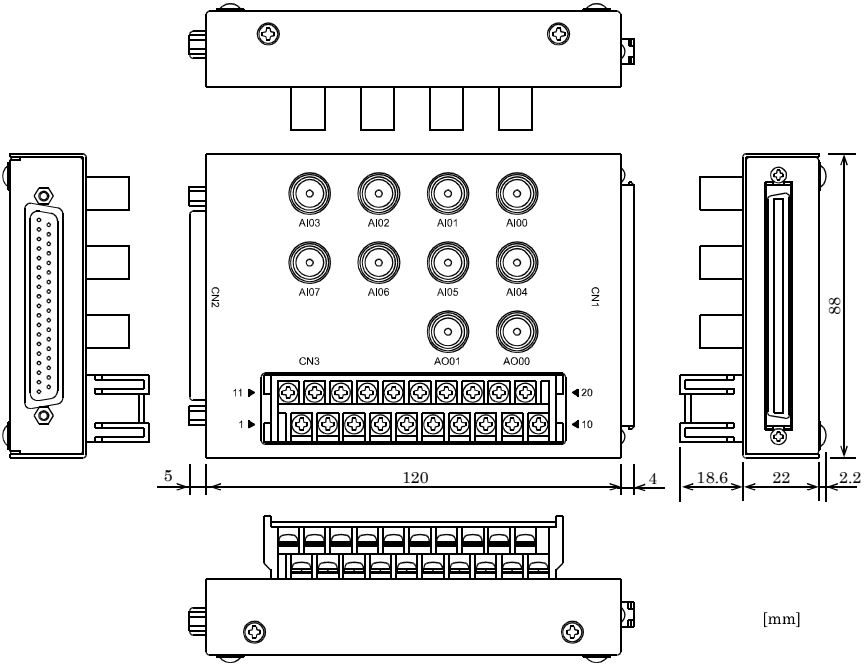


Figure 4 Dimensions and Connector Layout

6. Specifications

Table 9 Specifications of ATP-8

Items	Specification
Supported Products	AIO-163202F-PE、ADA16-32/2(PCI)F、ADA16-32/2(CB)F、AI-1664LA-LPE、AD16-64(LPCI)LA、AD12-8(PM)
Analog Input	8ch (BNC connector, AI00 - AI07)
Analog Output	2ch (BNC connector, AO00 - AO01)
Digital Input	4channels (Screw terminals, DI00 - DI03)
Digital Output	4channels (Screw terminals, DI00 - DI03)
Counter input and output	1ch (Screw terminals, CNTUP, CNTCLK, CNTOUT)
Operating Conditions	0 - 50ºC, 10 - 90%RH (no condensation)
Dimensions (mm)	120(W)×40.6(D)×88(H) (Not include the height of screw terminal block and rubber feet)
Weight	420g

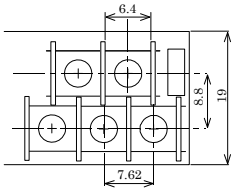
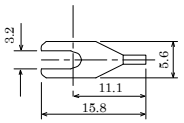
Table 10 Specification of Interface Connector CN1

Support products	AIO-163202F-PE、ADA16-32/2(PCI)F、ADA16-32/2(CB)F、AI-1664LA-LPE、AD16-64(LPCI)LA
Type of Connector	PCR-E96LMD
Type of mating connector	PCS-E96LKPA
Connecting Cable	ADA16-32/2(PCI)F, AIO-163202F-PE : PCB96-**PS, PCB96-**P(Option) ADA16-32/2(CB)F, AI-1664LA-LPE, AD16-64(LPCI)LA : ADC-68M/96F(Option)

Table 11 Specification of Interface Connector CN2

Support products	AD12-8(PM)
Type of Connector	37pin Female D-SUB Connector
Nut Parts	#4-40UNC Screws Nuts
Type of mating connector	37pin Male D-SUB Connector
Connecting Cable	AD12-8(PM) : PC-Card Bundled cable

Table 12 Specification of Terminal Block

Terminal	OBU-553-20P mfd by Osada	Suitable Y-type terminal	C3A mfd by JST Mfg. Co., Ltd.
Screw type	M3	Dimension of Y-type terminal [mm]	
Dimensions of Terminal [mm]			

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